WORKMAN | NYDEGGER
INTELLECTUAL PROPERTY ATTORNEYS

1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111
TELEPHONE: (801) 533-9800
FAX: (801) 328-1707
WEBSITE: HTTP://WWW.WNLAW.COM

FAX

DATE: August 31, 2007

TO:	Examiner Wang	**FROM:**	Colby Nuttall
COMPANY:	USPTO	**COMPANY:**	Workman Nydegger
FAX:	571-273-7665	**FAX:**	801/328-1707
PHONE:	571-272-7665	**PHONE:**	801/533-9800
EMAIL:	N/A	**EMAIL:**	cnuttall@wnlaw.com
RE:	Application Serial No. 10/764,622 – Attorney Docket No. 14984.36 Claim Amendments for Examiner's Amendment		

REMARKS: ☒ URGENT ☒ FOR YOUR REVIEW ☐ REPLY ASAP ☐ PLEASE COMMENT

COMMENTS:

Examiner Wang—

Attached is an amended set of claims for the above referenced application. As you will note, claims 23-35 are amended as we discussed by telephone. In particular, claims 23-35 have been recited to include language of "The method of..." rather than "A method as recited..."

Please contact me if you have any questions.

Best regards,

Total Pages: 6 **(inclusive)**

PROPOSED AMENDMENTS TO THE CLAIMS FOR EXAMINER'S AMENDMENT

Application Information:
Title: DYNAMICALLY DETERMINING DIRECTIONS OF GREEDOM FOR CONTROL POINTS USED TO REPRESENT GRAPHICAL OBJECTS
Serial No. 10/764,622
Filed January 26, 2004
Examiner Jin Cheng Wang

Listing of Claims:

1-21. (Cancelled).

22. (Previously Presented) In a computing system that has access to a set of control points for generating an outline for rendering a graphical object, some control points having one or more constraints thereon, a computerized method for automatically and dynamically determining one or more directions of freedom and an order for applying the one or more directions of freedom to move a control point in a manner that complies with a constraint and with a reduced likelihood of causing non-compliance with other of the one or more constraints, the method comprising:

(a) receiving a set of control points representing a graphical object;

(b) receiving one or more constraints on the set of control points for the graphical object;

(c) for a particular control point, identifying a first constraint applied to the control point;

(d) identifying a first direction of compliance in which compliance with the first constraint is measured;

(d) calculating, based on a location of the control point, that the control point does not comply with the first constraint;

(e) automatically and dynamically determining an order for setting directions of freedom and for moving the control point in the directions of freedom, based on a comparison of at least two angles defined between the first direction of compliance and first and second axes, comprising:

(i) calculating a first angle between the first direction of compliance and the first axis and calculating a second angle between the first direction of compliance and the second axis;

(ii) comparing the first angle with the second angle and determining that the first angle is less than the second angle, such that the first direction of compliance is closer to the first axis than the second axis; and

(iii) based on the determination that the first angle is less than the second angle and that the first direction of compliance is closer to the first axis than the second axis, setting the first axis as the first direction of freedom for moving the control point, and prior to setting the second direction of freedom for subsequently moving the control point, and such that the order in which the directions of freedom are set is automatically and dynamically dependent upon a magnitude of each of the first and second angles; and

(f) on a display device, rendering the graphical object using the set first direction of freedom and the set second direction of freedom, in the determined order.

23. (Currently Amended) ~~A method as recited in~~ The method of claim 22, wherein identifying a first constraint applied to the control point comprises identifying a first function that represents the first constraint, wherein solutions to the first function indicate compliance with the first constraint.

24. (Currently Amended) ~~A method as recited in~~The method of claim 22, wherein identifying a first constraint comprises identifying at least one of a distance constraint and a proportion constraint.

25. (Currently Amended) ~~A method as recited in~~ The method of claim 22, wherein calculating, based on a location of the control point, that the control point does not comply with the first constraint comprises determining that using the control point as input to a first function does not result in a value that approximates a zero.

26. (Currently Amended) ~~A method as recited in~~ The method of claim 22, wherein the first and second axes are each in the direction of one of an X axis or a Y axis.

27. (Currently Amended) ~~A method as recited in~~ The method of claim 22, further comprising:

moving the control point in the first direction of freedom to comply with the first constraint.

28. (Currently Amended) ~~A method as recited in~~ The method of claim 22, further comprising:

identifying a second constraint applied to the control point; and

using the first direction of compliance to set a second direction of freedom.

29. (Currently Amended) ~~A method as recited in~~ The method of claim 28, wherein the first direction of compliance is at a diagonal, and wherein using the first direction of compliance to set a second direction of freedom comprises setting the second direction of freedom perpendicular to the first direction of compliance, such that the second direction of freedom is at a diagonal.

30. (Currently Amended) ~~A method as recited in~~ The method of claim 22, further comprising:

identifying a second constraint applied to the control point, and

wherein automatically and dynamically determining an order for applying one or more directions of freedom comprises determining that the first constraint should be complied with before the second constraint because a non-diagonal direction of freedom is determined for the first constraint while a diagonal direction of freedom is determined for the second constraint.

31. (Currently Amended) ~~A method as recited in~~ The method of claim 30, further comprising:

moving the control point, in the direction of the first direction of freedom, to a location that results in compliance with the first constraint; and

moving the control point in the direction of the second direction of freedom in a manner that does not result in non-compliance with the first constraint.

32. (Currently Amended) ~~A method as recited in~~ The method of claim 22, wherein the graphical object is a character of text.

33. (Currently Amended) ~~A method as recited in~~ The method of claim 22, wherein the received set of control points and one or more constraints define the first constraint and the first direction of compliance, and without specifying the first direction of freedom.

34. (Currently Amended) ~~A method as recited in~~ The method of claim 22, further comprising:

for each control point in the set of control points, determining a number of constraints the control point is to comply with.

35. (Currently Amended) ~~A method as recited in~~ The method of claim 22, wherein acts (c)-(e) are repeated for each control point in the set of control points which has a constraint thereon.

36. (Previously Presented) A computer program product for use in a computing system that has access to a set of control points for generating an outline for rendering a graphical object, some control points having one or more constraints thereon, the computer program product for implementing a computerized method for dynamically determining one or more directions of freedom and an order for applying the one or more directions of freedom to move a control point in a manner that complies with a constraint and with a reduced likelihood of causing non-compliance with other of the one or more constraints, the computer program product comprising:

one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the computing system to perform the following:

receive a set of control points representing a graphical object;

receive one or more constraints on the set of control points for the graphical object;

for a particular control point, identify a first constraint applied to the control point;

identify a first direction of compliance in which compliance with the first constraint is measured;

calculate, based on a location of the control point, that the control point does not comply with the first constraint;

automatically and dynamically determine an order for setting directions of freedom and for moving the control point in the directions of freedom, based on a comparison of at least two angles defined between the first direction of compliance and first and second axes, comprising:

calculating a first angle between the first direction of compliance and the first axis and to calculate a second angle between the first direction of compliance and the second axis;

comparing the first angle with the second angle and determining that the first angle is less than the second angle, such that the first direction of compliance is closer to the first axis than the second axis; and

based on the determination that the first angle is less than the second angle and that the first direction of compliance is closer to the first axis than the second axis, setting the first axis as the first direction of freedom for moving the control point, and prior to setting the second direction of freedom for subsequently moving the control point, and such that the order in which the directions of freedom are set is automatically and dynamically dependent upon a magnitude of each of the first and second angles; and

on a display device, render the graphical object using the set first direction of freedom and the set second direction of freedom, in the determined order.

37. (Previously Presented) A computing system that has access to a set of control points for generating an outline for rendering of a graphical object, some control points having one or more constraints thereon, the computing system being adapted to perform a method for dynamically determining one or more directions of freedom and an order for applying the one or more directions of freedom to move a control point in a manner that complies with a constraint and with a reduced likelihood of causing non-compliance with other of the one or more constraints, the system comprising:

a processor;

one or more computer readable media having computer executable instructions stored thereon which, when executed by the processor, cause the computing system to perform the following:

access a set of control points representing a graphical object;

access one or more constraints on the set of control points for the graphical object;

for a particular control point, identify a first constraint applied to the control point;

identify a first direction of compliance in which compliance with the first constraint is measured;

calculate, based on a location of the control point, that the control point does not comply with the first constraint; and

automatically and dynamically determine an order for setting directions of freedom and for moving the control point in the directions of freedom, based on a comparison of at least two angles defined between the first direction of compliance and first and second axes, comprising:

calculating a first angle between the first direction of compliance and the first axis and to calculate a second angle between the first direction of compliance and the second axis;

comparing the first angle with the second angle and determining that the first angle is less than the second angle, such that the first direction of compliance is closer to the first axis than the second axis; and

based on the determination that the first angle is less than the second angle and that the first direction of compliance is closer to the first axis than the second axis, setting the first axis as the first direction of freedom for moving the control point, and prior to setting the second direction of freedom for subsequently moving the control point, and such that the order in which the directions of freedom are set is automatically and dynamically dependent upon a magnitude of each of the first and second angles; and

a display device for rendering the graphical object having an outline with control points which satisfy the one or more constraints.